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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/684,865	10/14/2003	Rida M. Hamza	H0005041 (256.149US1)	4784

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SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. BOX 2938
MINNEAPOLIS, MN 55402

EXAMINER	
ROBERTS, JESSICA M	
ART UNIT	PAPER NUMBER
2609	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/684,865	HAMZA ET AL.	
	Examiner	Art Unit	
	Jessica Roberts	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-27 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-27 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 10/14/03 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 10/14/03, 5/12/2005.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities

a. Jeffrey's measure is misspelled in paragraph [0039].

b. The abbreviation, dist., should be spelled out to define distribution in paragraph [0037].

c. The term doe, is missing the letter "s", paragraph [0027]

d. Reference characters described for figure 6, are not as disclosed in the drawing for figure 6.

Appropriate correction is required.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "210" has been used to designate both sample location and a computer, and reference character "220" has been used to designate both camera and communication link. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be

notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. It is not clear whether claim 23 is claiming the use of the modified Jeffery's measure, or a divergence measure. Claim 23 is treated as an exemplary claim. It is incumbent upon the applicant to check other claim(s) that may have similar problem.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> **(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.**

6. Claims1-15, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Monroe (US-2003/0025599).

Regarding claim 1, Monroe discloses a method of detecting motion in an area (remote area page 3 paragraph [0026]), the method comprising: receiving frames of the area (collecting event data at a remote location; page 6 paragraph [0049]); using a high speed motion detection algorithm to remove frames in which a threshold amount of motion is not detected (only changes in the data need be transmitted; see page 4, paragraph [0032], [0033]) and using a high performance motion detection (inter-frame coding; page 13, paragraph [0171]) algorithm on remaining frames to detect true motion from noise (suppress unimportant pixel change due to camera noise; page 13, paragraph [0211]. Furthermore, inter-coding combined with motion detection tracking on remaining frames implies high performance motion detection (page 13, paragraph [0172]).

Regarding claim 2, Monroe discloses the high speed detection algorithm operates in a compressed image domain ([compressed digital images; page 4, paragraph [0028]).

Regarding claim 3, Monroe discloses high speed detection algorithm operates in an uncompressed (optionally compressed; page 16, paragraph [0212]) image domain.

Regarding claim 4, Monroe discloses the high performance detection algorithm operates in an image pixel domain (page 9, paragraph [0117]).

Regarding claim 5, Monroe discloses the high speed motion detection algorithm represents portions of images in grey scale (see page 9, paragraph [0118]) pixels.

Regarding claim 6, Monroe discloses the image are represented in grey scale when such portions are not high in color content (see page 9, paragraph [0118]). Furthermore, gray scale representation occurs when images are not high in color content.

Regarding claim 7, Monroe discloses high performance detection algorithm operates on frames having pixels in grey scale for portions of the images low in color content (see page 9, paragraph [0118]), and having pixels in RGB or other color domain for portions of the images higher in color content (it should be noted that gray scales inherently have lower color content than color components; furthermore, since the system processes luminance component, it is inherent that it would also process chrominance components, i.e. color components).

Regarding claim 8, Monroe discloses the portions are based on an initial set up (defaulting and programmable modes; page 4, paragraph [0028]).

Regarding claim 9, Monroe discloses the high performance detection algorithm operates on frames having pixels in grey scale (see page 9, paragraph [0118]) for selected portions of the images, and having pixels in RGB or other color domain for other portions of the images wherein the portions are determined based on a real time assessment of dynamic change in the area (see page 5, paragraph [0045]) in order to represent color, luminance is accompanied by a two-color difference component chrominance. Furthermore, luminance and chrominance are just components of video, and since the system performs with luminance, it would be in turn inherent that it would be able to perform with chrominance.

Regarding claim 10, Monroe discloses the threshold is predetermined (defined threshold would be indicative of motion; page 8 paragraph [0115]).

Regarding claim 11, Monroe discloses the area is a predetermined (remote; page 8 paragraph [0108]) area.

Regarding claim 12, Monroe discloses the frames comprise pixels, and where such pixels are grouped in blocks of pixels (macro block; page 8, paragraph [0115]), each block being represented as a single (i.e. average or median) unit in the color domain. A macro block represents a single pixel; furthermore color domain can be luminance, chrominance, or YUV component.

Regarding claim 13, Monroe discloses the blocks of pixels are of different sizes (decimation various numbers of pixels will effectively change the sizes of pixel blocks; page 9 paragraph [0118]).

Regarding claim 14, Monroe discloses the area requiring higher resolution to detect motion are represented by blocks of smaller number of pixels (page 9, paragraph [0116] and fig. 2:21-24) Monroe discloses using the histogram to determine the degree of change, where pixels are grouped according the value of change.

Regarding claim 15, Monroe discloses the number of pixels in the blocks is varied based on depth of field (the degree of motion; page 9, paragraph [0121] and see fig. 3: 34)

Regarding claim 27, Monroe discloses a system for detecting motion in a monitored area, the system comprising: means for receiving video images of the monitored area; a fast video motion segmentation (VMS) module that rejects still images that do not portray any motion (motion of the fan is not detected as motion, and does not cause unnecessary transmission and storage of still image data page 9, paragraph [0121]); a robust VMS module that detects motion of an object in the monitored area (remote area; page 3, paragraph [0026]) ; and a resource management controller that initializes, controls, and adapts the fast and robust VMS modules (adaptive; page 9, paragraph [0123] and page 10, paragraph [0124]). Monroe discloses that the system is adaptive, thus necessitates a controller to initialize, control, and adapt the system for motion detection. Also, the basis for rejection of claim 1 applies to claim 27 because the system features as claimed correspond to the method of claim 1.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 16-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monroe in view of Pavlids et al.: Urban Surveillance Systems, 2001.

Regarding claim 16, which is substantially the same as claim 1 in addition to each block being represented as initializing a model of the area comprising multiple weighted distributions for each block of pixels. Thus, the analysis and rejection for claim 1 apply here for common subject matter.

Monroe fails to teach each block being represented as initializing a model of the area comprising multiple weighted distributions for each block of pixels. However, Pavlids does (see VI. Object Segmentation and Tracking, page 1485).

Therefore, taking the combined teaching of Monroe and Pavlids as a whole, it would have been obvious to have each block being represented as initializing a model

of the area comprising multiple weighted distributions for each block of pixels as claimed in order to improve processing speed and accuracy as discussed in Pavlids.

Regarding claim 17, the combination of Monroe and Pavlidis, as a whole further teaches the frames comprise blocks of pixels, and wherein a number of weighted distributions per block is varied (Monroe, continuous variable; page 9, paragraph [0121]).

Regarding claim 18, the combination of Monroe and Pavlidis further teaches the number of weighted distributions varies (Monroe, continuous variable; page 9, paragraph [0121]) between 1 and 5 (Pavlids, see VI. Object Segmentation and Tracking, page 1485).

Regarding claim 19, the combination of Monroe and Pavlidis, as a whole further teach the number of weighted distributions is varied based on dynamics of motions or expectations (Monroe; see page 9, paragraph [0123]).

Regarding claim 20, the combination of Monroe and Pavlidis, as a whole further teach the model is based on N successive frames and the weight is based on a count (Pavlidis, VI. Object segmentation and Tracking, *A. Initialization page* 1484-1485)

Regarding claim 21, see analysis and rejection of claim 16. Furthermore, a predefined number of weighted distributions is selected for each block of pixels, and wherein the weights are normalized as claimed are discussed in the combined teaching of Monroe and Pavlids (mixture of Normals; Pavlidis, *III.* Relevant Technical Work, page 1481 and VI. Object Segmentation and Tracking: *A. Initializing*, page 1485).

Regarding claim 22, the combined teaching of Monroe and Pavlids as a whole further teach if pixels in a new frame match the model, the model weights and distributions are updated (Pavlidis, VI. Object Segmentation and Tracking: *A. Initializing*, page 1485).

Regarding claim 23, the combined teaching of Monroe and Pavlids as a whole further teach a divergence measure (modified Jeffery's measure as defined above) is used to determine a match or non-match in the distributions (Pavlidis; VI. Object Segmentation and Tracking, *B Segmentation of Moving Objects*: The Matching Operation, page 1486).

Regarding claim 24, the combined teaching of Monroe and Pavlids as a whole further teach a predetermined number of frames have pixels or blocks that do not match the model, the lowest weighted distributions of the pixels or blocks of a background are removed from the model and replaced by ones derived from a foreground distribution once a derived number of sequences is reached within the last N successive frames (Pavlidis, VI. Object Segmentation and Tracking *B. Segmentation of Moving Objects:* Model Update When a Match is Not Found; page 1487).

Regarding claim 25, the combination of Monroe and Pavlids as a whole further teach the high speed motion detection algorithm operates in a compressed image domain (see Monroe, page 4, paragraph [0029]).

Regarding claim 26, the combination of Monroe and Pavlids as a whole further teach the high speed motion detection algorithm operates in an uncompressed image domain (in Monroe, the calculation of the difference between two images is tabulated

uncompressed or compressed, see page 4, paragraph [0032], also page 16, paragraph 0212, optionally compressed).

Examiner's Note

The referenced citations made in the rejection(s) above are intended to exemplify areas in the prior art document(s) in which the examiner believed are the most relevant to the claimed subject matter. However, it is incumbent upon the applicant to analyze the prior art document(s) in its/their entirety since other areas of the document(s) may be relied upon at a later time to substantiate examiner's rationale of record. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

Contact

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica Roberts whose telephone number is (571) 270-1821. The examiner can normally be reached on 7:30-5:00 EST Monday-Friday, Alt Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vu Le can be reached on (571) 272-7332. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMR

VU LE
SUPERVISORY PATENT EXAMINER